

# A REDESCRIPTION OF *PARAKIEFFERIELLA* SP. D. WÜLKER, THE PUPA OF *PARAKIEFFERIELLA WUELKERI* MOUBAYED (DIPTERA: CHIRONOMIDAE), A SPECIES NEW TO BRITAIN

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Wülker (1957) described the pupa and female of a *Parakiefferiella* species from two rivers in Spain: Rio Guadarrama, north-west of Madrid and an unnamed river west of Malaga. He refrained from naming the species, because the female could be only partially described from a pharate adult and no adult males had been obtained. Associated material from northern Algeria has enabled Moubayed (1994) to describe the male and female adults. Pupal exuviae from Oued Sebaou (downstream from the type locality), Oued Sarrath, Tunisia, and Carie Burn, Scotland, allow an amplification of Wülker's description.

## DESCRIPTION OF PUPA

Length 2.1–2.7 mm (n=22). Transparent colourless to faintly golden-brown, especially along the posterior transverse point bands of tergites II–V.

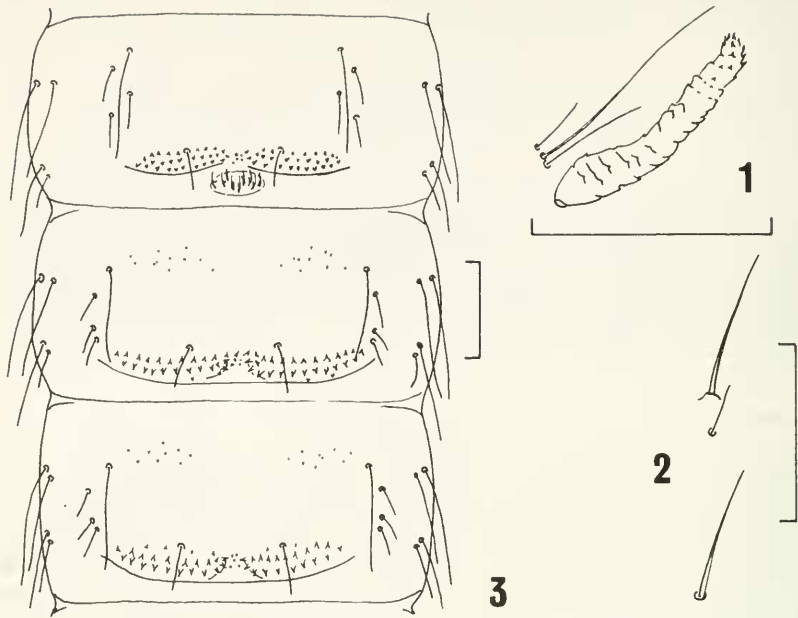
Cephalothorax. Cephalic tubercles very shallow, terminating in a short conical or parallel-sided papilla. Frontal setae 100–140  $\mu\text{m}$  long (n=6). Suture anteriorly rugosely granulate. Thoracic horn (Fig. 1) 90–160  $\mu\text{m}$  long, 3.9–8.8 times as long as broad (n=18), scaled from near base, the scales grading to teeth at horn apex. Lateral antepnotal setae 120 and 105  $\mu\text{m}$  long (n=1), thicker than the median antepnotal setae, about 1  $\mu\text{m}$  thick at base. Median antepnotal setae 60–93 and 75–110  $\mu\text{m}$  long (n=3), very thin, less than 1  $\mu\text{m}$  thick at base. Precorneal setae 30–60, 85–110, 33–65  $\mu\text{m}$  long (n=7), the long middle seta about 1.5  $\mu\text{m}$  thick at base, the other two very thin. Only three dorsocentral setae (Fig. 2), the first and third spine-like, the second thin; 60–73, 33–70, 50–75  $\mu\text{m}$  long (n=5).

Abdomen (Fig. 3). Tergite I unarmed. Tergites II–VII with a posterior transverse band of points, strongest on III, the points decreasing in size and extent to VII. On tergite II the posterior band is broken medially to accommodate a small circular patch of anteriorly directed hooks. The posterior band is narrowly broken on tergites III–VII, but the gap is bridged by small points. Tergites III–VI have an additional anterolateral patch of small points. Tergites VIII and IX unarmed. Sternite VIII armed anterolaterally with a patch of small points; an indication of such patches may occur on sternites VII and VI. Each anal lobe drawn out posteriorly into a short to long, curved, smooth or minutely toothed "tail". Each anal lobe 2.1–3.1 times as long as broad (n=15). Anal macrosetae 70–80  $\mu\text{m}$  long, 0.24–0.48 length of anal lobes (n=11). Male genital sacs extend nearly to tip of anal lobes.

Abdominal chaetotaxy:

	I	II	III	IV	V	VI	VII	VIII
D	5	5	5	5	5	5	5	2
L	2	4	4	4	4	4	4	3 (2)
V	2	4	4	4	4	4	4	1

Lateral setae 1–3 of segments II–VII strong, stiff; seta 4 small and weak. Anterior lateral seta of segment I strong, posterior seta very small. Pedes spurii A present on segments IV–VI; pedes spurii B absent.



Figs 1-3. *Parakiefferiella wuelkeri* pupa. 1: thoracic horn and precorneal setae, 2: dorsocentral setae, 3: segments II-IV dorsal, scale = 0.1 mm.

#### SYSTEMATICS

The pupa of *P. wuelkeri* differs from the generic diagnosis given by Coffman *et al.* (1986) in a number of respects: one long and two short precorneal setae instead of the usual two long and one short, three dorsocentral setae instead of four, hook row of segment II present, and pedes spurii B absent. Other species of *Parakiefferiella* may lack pedes spurii B (Langton, 1991), but in respect of the other three characters *P. wuelkeri* is unique.

#### DISTRIBUTION AND HABITAT

The main centre of distribution would appear to be western Mediterranean (Moubayed, 1993); in northwest Africa it is characteristic of temporary lowland rivers and streams. The species is, however, much more widespread, for pupal exuviae were collected by Jane Atkins and Sandra Hogg, 14.v.1985, in Carie Burn, a 4-metre wide permanent stream flowing rapidly down to Loch Rannoch, Scotland. There is also a specimen in the Zoologische Staatssammlung, Munich, from the Forggensee at Füssen, south Germany, in the northern foothills of the Alps.

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## BOOK REVIEW

**The moths and butterflies of Great Britain and Ireland, Vol. 7, Part 2, (Lasiocampidae–Thyatiridae, with life history chart of the British Lepidoptera)** edited by A. M. Emmet and J. Heath, Colchester, Harley Books, 1992, 400 pages, 8 col. plates, £27.50, paperback.—This volume is divided into three sections. The first 50 pages are devoted to two chapters, the first on the classification of the Lepidoptera by M. Scoble, the second on the resting posture in Lepidoptera by the late M. Tweedie and A. M. Emmet. The first chapter deals initially with the history of classification, and this is followed by its modern development. It is made clear that further changes will be made in the light of research. Chapter 2 is accompanied by four coloured plates of excellent photographs illustrating the resting poses of thirty-two British Lepidoptera; these are not life size, but the legend gives the actual size of each insect.

The main section, over 200 pages, comprises charts outlining the life history and habits of the British Lepidoptera. The life cycle on a monthly basis is given, but additional information covers such subjects as diapause, pupal site, type of cocoon, status of species (using eight categories), distribution (based upon eleven major regions which include the Channel Islands), habitat (based on twelve major types, most of which are subdivided), flight time of moth, larval foodplants, conservation, including legislation, and Red Data Book category. Much of the information is portrayed by symbols.

The final section of the volume continues with the description and life history of the British moths—the families Lasiocampidae to Thyatiridae—by B. Goater and M. Young. The species are illustrated by four coloured plates. For each native species the text is accompanied by a map based on 10-km squares of the National Grid.

The introductory chapters make a valuable contribution. It is interesting to read that the neotropical family *Hedylidae*, whose species were formerly included in the *Geometridae*, has recently been included in the butterflies, and some of the species possess bipectinate antennae! The reason why is given. In Chapter 2 one learns that Linnaeus based his classification of moths, except the hawk-moths, largely upon their resting positions.

Evidently considerable effort has been made to ensure that the life history charts are accurate. Second thoughts have prevailed regarding several statements made in previous volumes, and corrections made. Thus in Volume 9 *Acrionicta psi* (L.) is